

Essential Conditions to Make It Happen

Students in a Chicago elementary school recently used technology to explore the history of Ice Age animals in Illinois. Using the Internet, they “traveled” to the Illinois State Museum (200 miles away) and the Brookfield Zoo (10 miles away) to gather information and talk with experts via two-way video. The students constructed an electronic database to organize and analyze their information and shared their findings with students outside their own school through multimedia reports posted on a Web site titled “Mastodons in Our Own Backyard.”

Successful learning activities, such as this, depend on more than just the technology. Certain conditions are necessary for schools to effectively use technology for learning, teaching, and educational management. Physical, human, financial, and policy dimensions greatly affect the success of technology use in schools.

A combination of essential conditions are required to create learning environments conducive to powerful uses of technology, including:

- ▶ *Vision with support and proactive leadership from the education system*
- ▶ *Educators skilled in the use of technology for learning*
- ▶ *Content standards and curriculum resources*
- ▶ *Student-centered approaches to learning*
- ▶ *Assessment of the effectiveness of technology for learning*
- ▶ *Access to contemporary technologies, software, and telecommunications networks*
- ▶ *Technical assistance for maintaining and using technology resources*
- ▶ *Community partners who provide expertise, support, and real-life interactions*
- ▶ *Ongoing financial support for sustained technology use*
- ▶ *Policies and standards supporting new learning environments*

This book is designed to provide teachers, technology planners, teacher preparation institutions, and educational decision makers with frameworks, standards, and performance indicators to guide them in establishing enriched learning environments supported by technology. These new learning environments provide rich opportunities for students to find and utilize current information and resources, and apply academic skills for solving real-world problems. These environments engage students in activities that have educational technology skills and relevant curricular content interwoven.



Traditional educational practices no longer provide students with all the necessary skills for economic survival in today's workplace. Students today must apply strategies for solving problems using appropriate tools for learning, collaborating, and communicating. The following chart lists characteristics representing traditional approaches to learning and corresponding strategies associated with new learning environments:

ESTABLISHING NEW LEARNING ENVIRONMENTS

Incorporating New Strategies

Traditional Learning Environments	New Learning Environments
<i>Teacher-centered instruction</i>	<i>Student-centered instruction</i>
<i>Single-sense stimulation</i>	<i>Multisensory stimulation</i>
<i>Single-path progression</i>	<i>Multipath progression</i>
<i>Single media</i>	<i>Multimedia</i>
<i>Isolated work</i>	<i>Collaborative work</i>
<i>Information delivery</i>	<i>Information exchange</i>
<i>Passive learning</i>	<i>Active/exploratory/inquiry-based learning</i>
<i>Factual, knowledge-based learning</i>	<i>Critical thinking and informed decision-making</i>
<i>Reactive response</i>	<i>Proactive/planned action</i>
<i>Isolated, artificial context</i>	<i>Authentic, real-world context</i>

The most effective learning environments meld traditional approaches and new approaches to facilitate learning of relevant content while addressing individual needs. The resulting learning environments should prepare students to:

- ▶ *Communicate using a variety of media and formats*
- ▶ *Access and exchange information in a variety of ways*
- ▶ *Compile, organize, analyze, and synthesize information*
- ▶ *Draw conclusions and make generalizations based on information gathered*
- ▶ *Know content and be able to locate additional information as needed*
- ▶ *Become self-directed learners*
- ▶ *Collaborate and cooperate in team efforts*
- ▶ *Interact with others in ethical and appropriate ways*

Teachers know that the wise use of technology can enrich learning environments and enable students to achieve marketable skills. It is still critical, however, that educators analyze the potential benefits of technology for learning and employ it appropriately.